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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/240,275	01/29/1999	HARVEY L. BERGER	12-0892	7177

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EXAMINER	
KIM, KEVIN	
ART UNIT	**PAPER NUMBER**
2638	

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/240,275	BERGER ET AL.	
	Examiner	Art Unit	
	Kevin Y. Kim	2638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 September 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8-16 and 18-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *3,4,13,14 and 18-20* is/are allowed.

6)☒ Claim(s) *1,2,5,6,8-12,15 and 16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 29, 2005 has been entered.

Response to Amendment

2. It is appreciated that Applicant cancelled claims 7 and 17 in order to put the application in condition for allowance in accordance with the previous Office action of April 29, 2005. However, upon further consideration, a new prior art has been discovered which is believed to have anticipated some of the claims previously indicated as allowable. The indicated allowability of those claims is withdrawn in view of the newly discovered reference(s) to Rijns. Rejections based on the newly cited reference(s) follow. It is regrettable that the indication of allowability might have caused inconvenience to Applicant.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an

international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1,2,5,6,8-12,15 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Rijns (US 5,832,039).

Claim 1.

Rijns discloses a demodulator (see Fig.6) comprising:

a system (60) for receiving modulated signals defining received signals (see Fig.5);

a storage device (an element in 63 for holding the slice level) for storing initial decision boundaries for demodulating the modulated signals;

a system (62) for determining the actual distance between the received signals (note that when the positive peak (PE) is added to the negative peak (NE), the result is the distance between two signal instances, see col. 5, lines 23);

a system (62) for adjusting the initial boundaries as a function of the actual distance (the half of the distance between PE and NE is used to adjust the slice level); and

a system (63) for decoding the modulated signals relative to the adjusted decision boundaries (the modulated signal (I) is decoded relative to the adjusted slice level). See col. 4, lines 50-64 in particular.

Claim 2.

The adjusting of the slice level, i.e., the decision boundary, is another way to put mapping a decision boundary to a decision map.

Claim 5.

Rijns discloses a demodulator (see Fig.6) comprising:

a system (60) for receiving modulated signals defining received signals (see Fig.5);

a storage device (an element in 63 for holding the slice level) for storing a reference constellation;

a system (62) for determining the actual distance between the received signals (note that when the positive peak (PE) is added to the negative peak (NE), the result is the distance between two signal instances, see col. 5, lines 23);

a system (62) for adjusting the location of the reference constellation (the slice level) as a function of the actual distance (the half of the distance between PE and NE is used to adjust the slice level); and

a system (63) for decoding the modulated signals relative to the adjusted reference constellation (the modulated signal (I) is decoded relative to the adjusted slice level). See col. 4, lines 50-64 in particular.

Claim 6.

The adjusting of the slice level, i.e., the decision boundary, is another way to put mapping a decision boundary to a decision map.

Claim 8.

Rijns discloses a demodulator (see Fig.6) comprising:

a system (60) for receiving modulated signals defining received signals (see Fig.5);

a storage device (an element in 63 for holding the slice level) for storing a reference constellation;

a system (62) for determining the actual distance between the received signals (note that when the positive peak (PE) is added to the negative peak (NE), the result is the distance between two signal instances, see col. 5, lines 23);

a system (62) for adjusting the location of the reference constellation (the slice level) as a function of the actual distance (the half of the distance between PE and NE is used to adjust the slice level); and

a system (63) for decoding the modulated signals relative to the adjusted reference constellation (the modulated signal (I) is decoded relative to the adjusted slice level). See col. 4, lines 50-64 in particular.

Further, the system (62) for adjusting includes a system for dithering each point in the reference constellation and selecting a location for said for the constellation in which the bit error rate is minimal, in that the slice level is selected halfway between the two envelopes (PE and NE), which would result in the minimal bit error rate.

Claims 9 and 10.

Selecting the slice level halfway between the two envelopes dithers the points (PE and NE) in both a horizontal and a vertical direction.

Claim 11.

Rijns discloses a method for demodulating a signal (see Fig.6) comprising:

(a) receiving modulated signals defining received signals (see Fig.5);

(b) storing initial decision boundaries for demodulating the modulated signals, see element in 63 for holding the slice level);

(c) determining the actual distance between the received signals (note that when the positive peak (PE) is added to the negative peak (NE), the result is the distance between two signal instances, see col. 5, lines 23);

(d) adjusting the initial boundaries so as to be at the midpoint of the actual distance (the half of the distance between PE and NE is used to adjust the slice level);

(e) storing the adjusted decision boundaries (the adjusted slice level is stored as a new slice level) and

(f) decoding the modulated signals relative to the adjusted decision boundaries (the modulated signal (I) is decoded relative to the adjusted slice level).

See col. 4, lines 50-64 in particular.

Claim 12.

The adjusting of the slice level, i.e., the decision boundary, is another way to put mapping a decision boundary to a decision map.

Claim 15.

Rijns discloses a method for demodulating a signal (see Fig.6) comprising:

(a) receiving modulated signals defining received signals (see Fig.5);

(b) storing a reference constellation, see element in 63 for holding the slice level;

(c) determining the actual distance between pairs of the received signals (note that when the positive peak (PE) is added to the negative peak (NE), the result is the distance between two signal instances, see col. 5, lines 23);

(d) adjusting the location of the reference constellation as a function of the actual distance (the half of the distance between PE and NE is used to adjust the slice level);

(e) storing the adjusted reference constellation (the adjusted slice level is stored as a new slice level) and

(f) decoding the signals relative to the adjusted reference constellation (the modulated signal (I) is decoded relative to the adjusted slice level).

See col. 4, lines 50-64 in particular.

Claim 16.

The adjusting of the slice level, i.e., the decision boundary, is another way to put mapping a decision boundary to a decision map.

Allowable Subject Matter

5. Claims 3,4,13,14,18-20 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y. Kim whose telephone number is 571-272-3039. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Kevin Y. Kim/

12/13/05

KEVIN KIM
PATENT EXAMINER